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Comparison of the results of ^{85}Kr transport modeling with the ACURATE field experiment data

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Abstract

© 2017, Allerton Press, Inc.Currently the Nuclear Safety Institute of the Russian Academy of Sciences (NSI RAS) jointly with the Hydrometcenter of Russia is developing the system for forecasting the transfer of radio-active substances in the atmosphere in case of radiation accidents at Russian nuclear power plants. The operation of the system is based on the numerical hydrodynamic model which allows forecasting meteorological parameters and is coupled with the mesoscale dispersion model of the transfer ofradioactive substances in the atmosphere. The results are presented of 85Kr transport modeling under the conditions of the ACURATE experiment with three transport models: FLEXPART, HYSPLIT, and the model from the NOSTRADAMUS software package. It is demonstrated that all three Lagrangian models can give a qualitative description of concentration fields from the ACURATE experiment with the best value of the RANK metric (2.5) based on three statistics.

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Keywords

contaminant transfer, NPP, radionuclide, transport-dispersion models, WRF-ARW model

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